

APPROVED O.G. FIG.
BY CLASS/SUBCLASS
DRAWN

201020"26T2900T

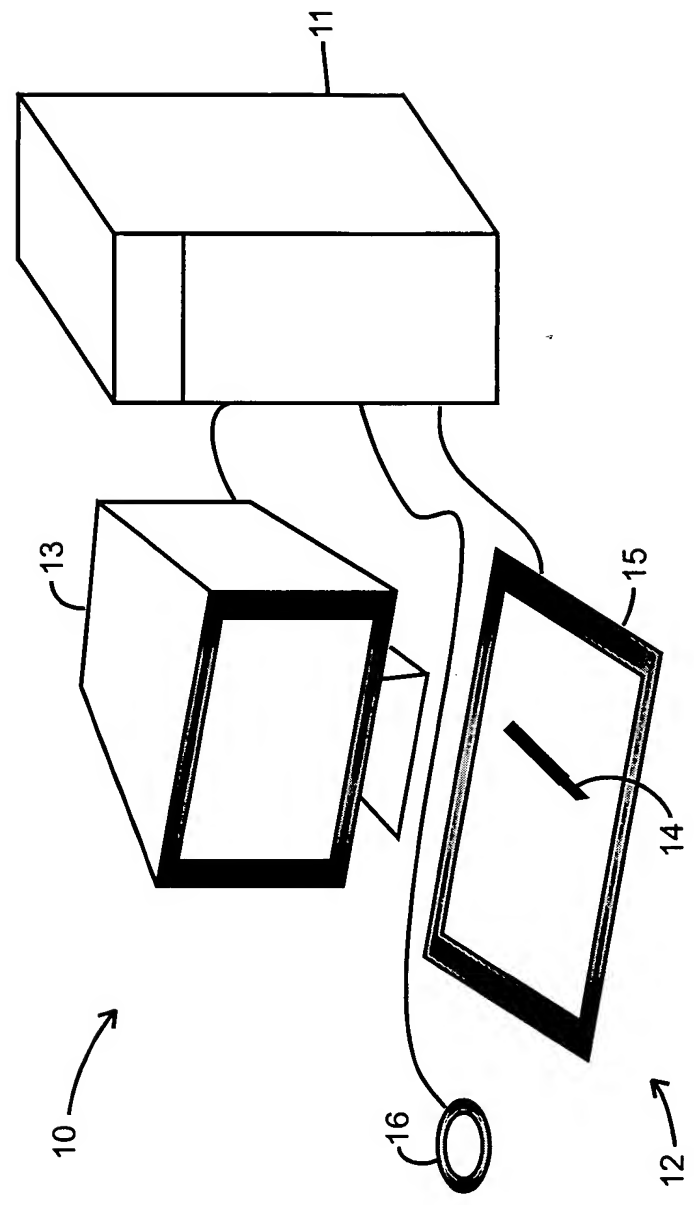
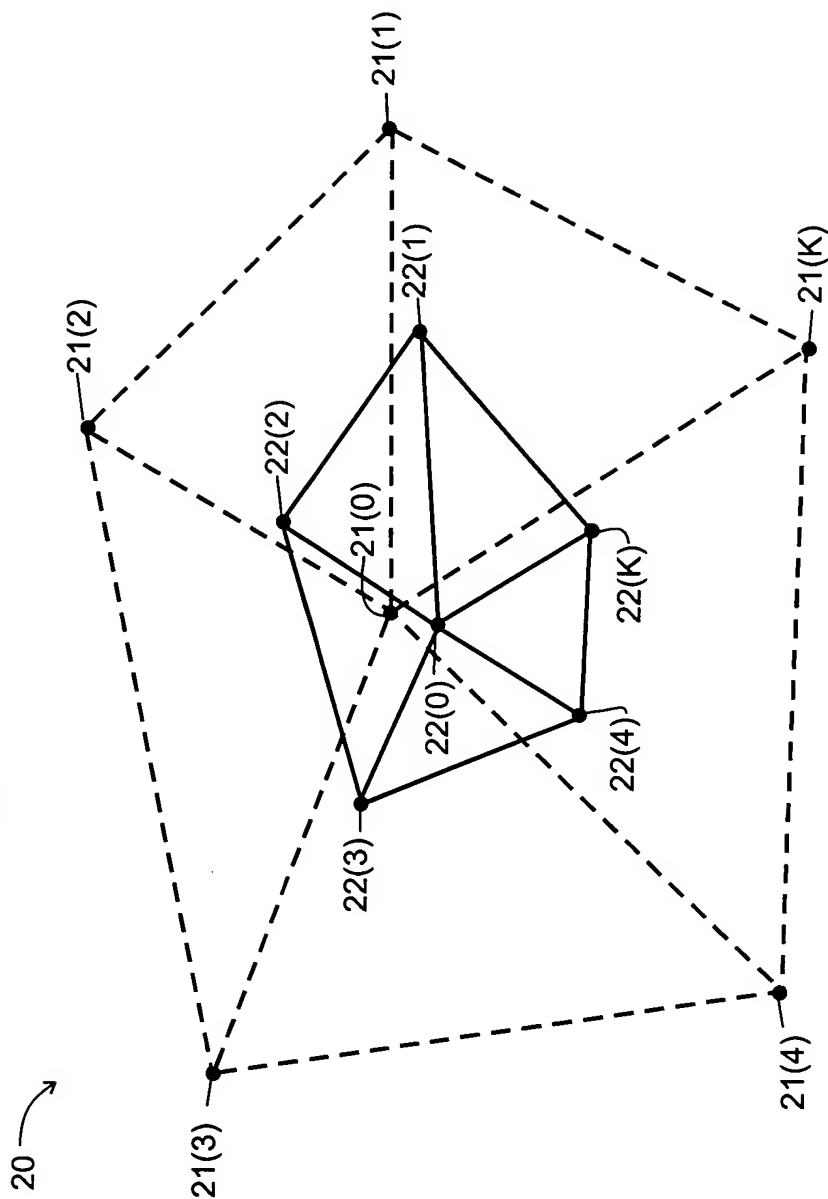


FIG. 1

FIG. 2



SECRET

FIG. 3

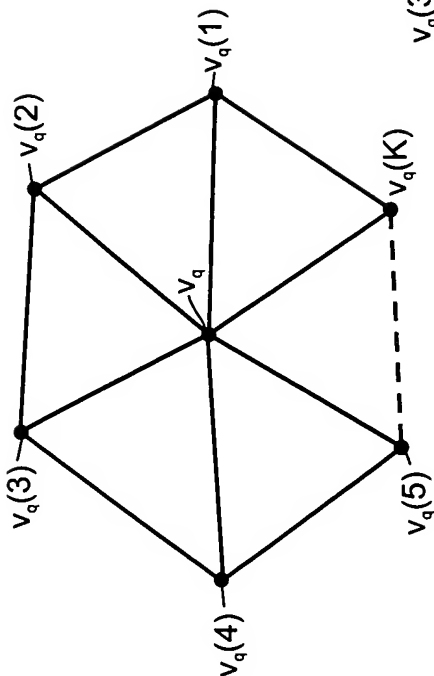
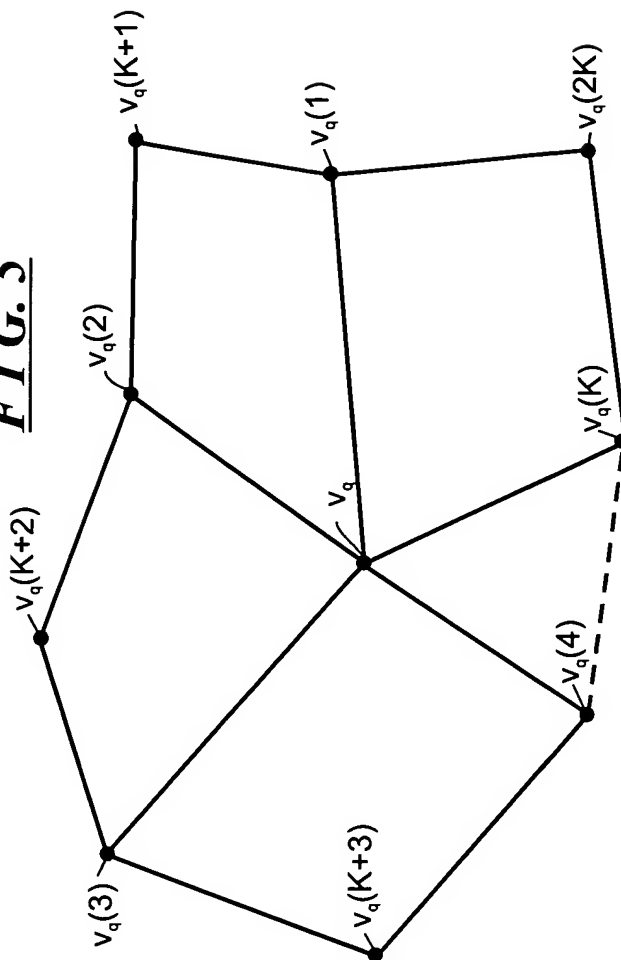


FIG. 6



FIG. 5



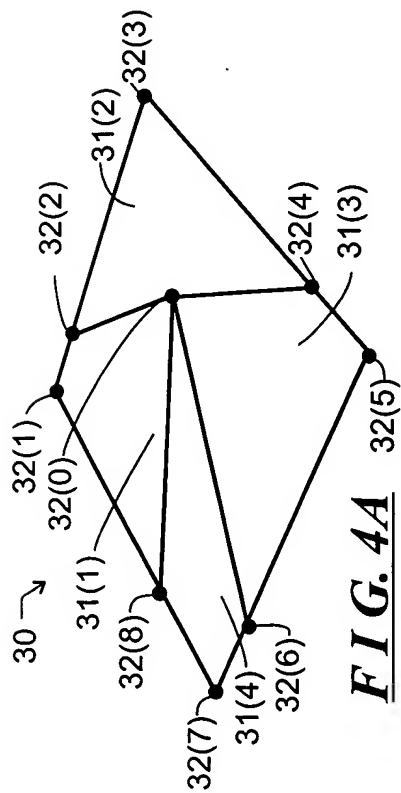


FIG. 4A

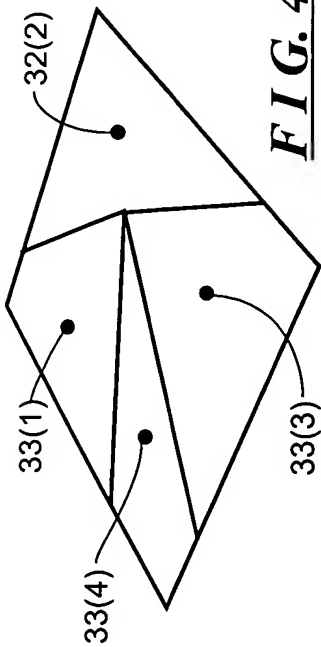


FIG. 4B

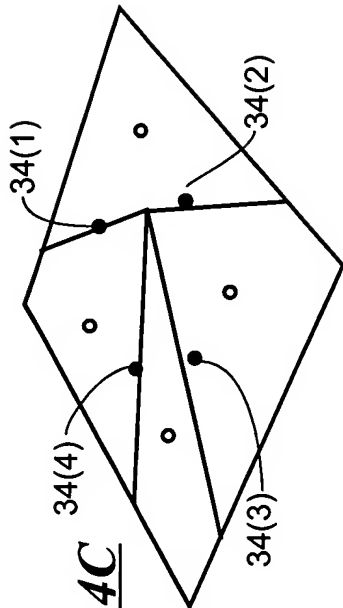


FIG. 4C

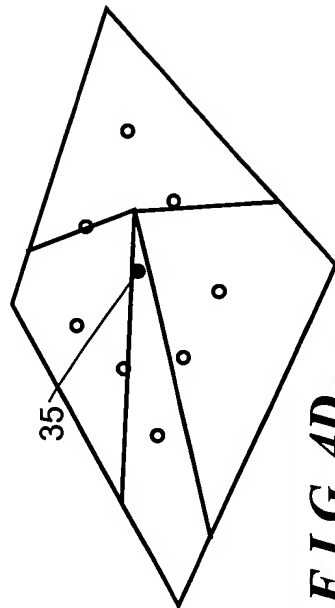


FIG. 4D

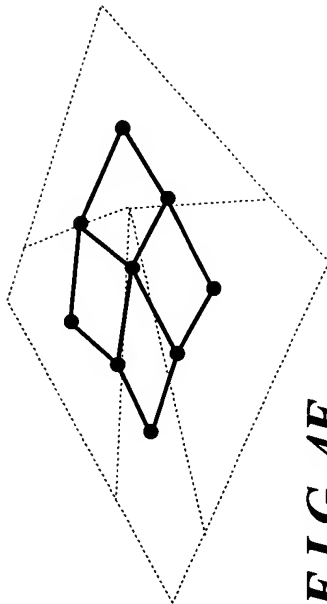


FIG. 4E

FIG. 7

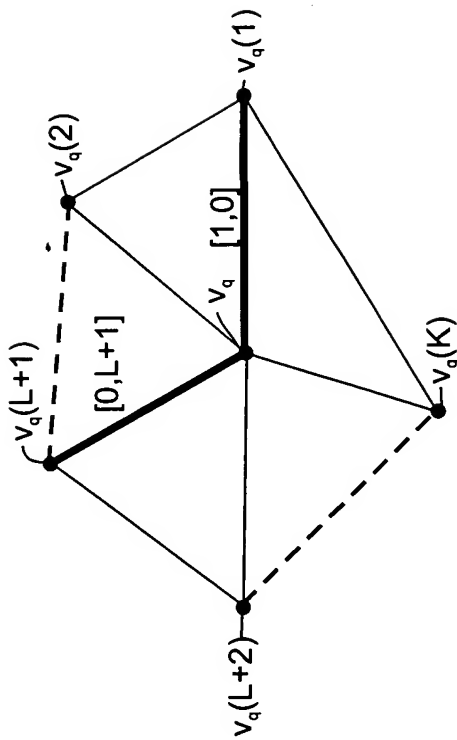
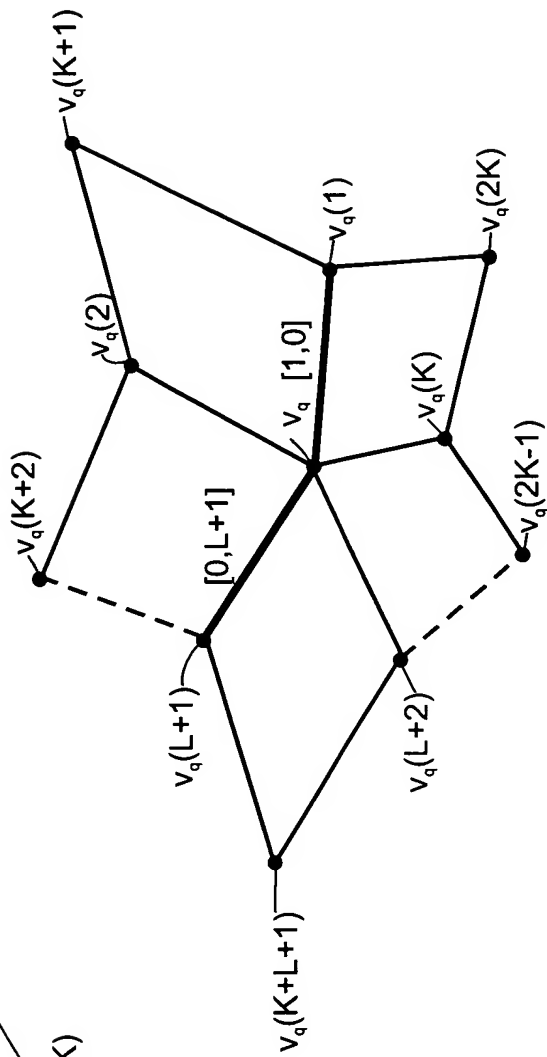


FIG. 11



```

{{{0.443421, 0.0305333, 0.0443492, 0.063879},
{0.141259, 0.000136599, 0.0148707, -0.00109843, 0.0076581, 0.00346819},
{0.137049, -0.0228996, -0.0252566, -0.0355625}}},

{{{0.507082, 0.00548929, 0.0401558, 0.0564534},
{0.0868566, -0.0011115, 0.00665411, 0.0170916, 0.0230283, 0.0282183},
{0.0798101, 0.0011115, -0.00665411, -0.0170916, -0.0230283, -0.02821831}}},

{{{0.546139, -0.00876865, 0.0367544, 0.0515309},
{0.0624505, 0.0000190515, 0.00420011, 0.0235243, 0.0299978, 0.0374255},
{0.0549644, 0.00100817, -0.00262778, -0.0103025, -0.018209, -0.0199813},
{0.0545996, 0.00385665, -0.0167627, -0.02287961}},

{{{0.569384, -0.0174006, 0.0347388, 0.0488958},
{0.0492081, 0.00137333, 0.00352836, 0.0265662, 0.0335014, 0.04176},
{0.041625, 0.000915469, -0.00067263, -0.00692784, -0.0452469, -0.0156944},
{0.041455, 0.00276316, 0.00319311, -0.0121777, -0.0131791, -0.0172232}},

{{{0.583819, -0.0229457, 0.033557, 0.0474568},
{0.0410612, 0.00233865, 0.00324378, 0.0283714, 0.0356025, 0.0443077},
{0.0334219, 0.000972271, 0.00061938, -0.00491482, -0.0134267, -0.0132165},
{0.0334221, 0.00206077, 0.00252556, -0.00965791, -0.0106496, -0.0137397},
{0.0334038, 0.00242508, -0.0101821, -0.0137964}}},

{{{0.593245, -0.0267059, 0.0328437, 0.0466408},
{0.0355851, 0.00297761, 0.00304271, 0.0295939, 0.0370233, 0.046002},
{0.0279003, 0.00104983, 0.00153165, -0.00357477, -0.0122096, -0.0116001},
{0.0280143, 0.00165583, 0.00211342, -0.00801975, -0.00895655, -0.011451},
{0.028013, 0.0019267, 0.00196427, -0.00846173, -0.00851908, -0.01147851}},

{{{0.599687, -0.0293753, 0.0323998, 0.0461601},
{0.0316607, 0.003399, 0.00286238, 0.030491, 0.0380604, 0.0472708},
{0.0239354, 0.00112319, 0.0022051, -0.00262133, -0.0113374, -0.0104596},
{0.0241309, 0.00138912, 0.00184042, -0.00685571, -0.00775225, -0.0098265},
{0.0241418, 0.00160907, 0.00164503, -0.0072665, -0.00732092, -0.00984525},
{0.0241408, 0.00163116, -0.00729284, -0.00984683}}}

```

FIG. 8

```

{{{ -0.301785, 0.174949, -0.133614, -0.209551},
{ 0.705044, -0.125369, 0.125961, -0.00701645, 0.0422859,
-0.0432493, -0.0578848, 0.00208289, 0.11396, -0.0510825},
{ 0.276585, -0.106806, 0.0710183, 0.162541}},

{{ -0.22302, 0.191801, -0.17859, -0.132583},
{ 0.576045, -0.0351631, 0.184874, 0.102395, -0.0266634,
-0.0776289, -0.128676, -0.032089, 0.10653, 0.0390144},
{ 0.293717, -0.00509685, -0.229814, -0.0381521, 0.095394,
0.18197, 0.0278911, -0.00152759, -0.138467, -0.176618}},

{{ 0.194666, 0.22213, -0.206238, -0.0888663},
{ 0.497563, -0.0098554, 0.17913, 0.089555, -0.0385274,
-0.412269, -0.0936961, -0.00532702, 0.109533, 0.0888449},
{ 0.364945, -0.108665, -0.261022, 0.194226, 0.309506,
0.347327, -0.109823, -0.466012, -0.254932, -0.266218},
{ 0.0249163, -0.0652217, 0.0561124, 0.0302425}},

{{{ -0.155005, 0.171102, -0.163234, -0.0674223},
{ 0.42234, 0.00621144, 0.154979, 0.0459924, -0.0651407,
-0.109828, -0.0522684, 0.0231508, 0.113788, 0.0911789},
{ 0.434147, -0.0824354, -0.201508, 0.16284, 0.241594, 0.26683,
-0.091361, -0.130981, -0.19205, -0.204451},
{ 0.264696, -0.00318438, -0.0209969, 0.00771203, 0.0489318,
0.0612083, -0.0066327, -0.0186443, -0.0486152, -0.0532146}},

{{ -0.138635, 0.149761, -0.144616, -0.0583901},
{ 0.388516, 0.0502042, 0.17695, -0.0367233, -0.145073,
-0.189469, -0.00768783, 0.0782015, 0.14955, 0.142332},
{ 0.401914, -0.0679866, -0.178113, 0.134779, 0.201924,
0.234623, -0.0727325, -0.10786, -0.160807, -0.179405},
{ 0.292433, -0.0313445, -0.0445371, 0.0666588, 0.100615,
0.119528, -0.0377854, -0.0494528, -0.0736189, -0.0872955},
{ 0.00306035, -0.0101548, 0.00637489, 0.00427581}}}

```

FIG. 9

FIG. 10

100. INITIALIZE THE SUBDIVISION MATRICES $S_{\{sc,T,K,L\}}(S_{\{1\}}(J), S_{\{2\}}(J))$, $J=0,1,2$ AS DESCRIBED IN CONNECTION WITH EQUATION (19)

101. GENERATE THE MATRIX PRODUCTS $S_{\{sc,T,K,L,LP\}}(J)(S_{\{1\}}, S_{\{2\}})$ FOR $J=2,3$; FOR $J=1$, $S_{\{sc,T,K,L,LP\}}(1)(S_{\{1\}}, S_{\{2\}}) = S_{\{sc,T,K,L\}}(S_{\{1\}}, S_{\{2\}})$, AND FOR $J=0$, $S_{\{sc,T,K,L,LP\}}(0)(S_{\{1\}}, S_{\{2\}})$ IS THE "K+1"-BY-"K+1" IDENTITY MATRIX $I_{\{K+1\}}$

102. USE THE FIRST ROW OF EACH MATRIX PRODUCT $S_{\{sc,T,K,L,LP\}}(J)(S_{\{1\}}, S_{\{2\}})$, $J=0, 1, 2, 3$, TO GENERATE COMPONENT-WISE AN APPROXIMATION TO LIMIT POINT WEIGHT VECTOR $I_{\{LP\}}$ IN ACCORDANCE WITH THE EXTRAPOLATION FORMULA IN EQUATION (41)

103. USE THE MATRIX PRODUCTS $S_{\{sc,T,K,L,LP\}}(J)(S_{\{1\}}, S_{\{2\}})$, DILATION FACTOR $d(K)$ AND VECTORS $v_{\{C\}}$ AND $v_{\{S\}}$ TO GENERATE THE VECTORS $I_{\{C\}}(J)$ AND $I_{\{S\}}(J)$, $J=1, 2$, AND 3 AS DESCRIBED IN CONNECTION WITH EQUATION (43); FOR $J=0$, THE RESPECTIVE TANGENT VECTOR WEIGHT VECTORS ARE $I_{\{C\}}(0) = v_{\{C\}}$ AND $I_{\{S\}}(0) = v_{\{S\}}$

104. USE VECTORS $I_{\{C\}}(J)$ AND $I_{\{S\}}(J)$ TO GENERATE APPROXIMATIONS TO THE TANGENT VECTOR WEIGHT VECTORS $I_{\{C\}}$ AND $I_{\{S\}}$ IN ACCORDANCE WITH EQUATION (46)

105. USE THE LIMIT POINT WEIGHT VECTOR $I_{\{LP\}}$ AND TANGENT VECTOR WEIGHT VECTORS $I_{\{C\}}$ AND $I_{\{S\}}$, ALONG WITH THE POSITIONS OF THE VERTEX $v_{\{q\}}(0)$ AND NEIGHBORING POINTS $v_{\{q\}}(1)$ THROUGH $v_{\{q\}}(K)$ TO GENERATE THE LIMIT POINT AND TANGENT VECTORS AS DESCRIBED IN CONNECTION WITH EQUATIONS (30) AND (37), RESPECTIVELY; THE NORMAL VECTOR CAN ALSO BE GENERATED AS THE CROSS PRODUCT BETWEEN THE TANGENT VECTORS

{{0.453887, 0.00731802, 0.05353, 0.0752922},
 {0.113455, -0.00404127, 0.00775988, 0.0109619, 0.0185743, 0.0160113},
 {0.10639, -0.00365901, -0.026765, -0.0376461},
 {0.113452, 0.00775988, -0.00404127, 0.0160113, 0.0185743, 0.01096191}

FIG. 12

{{-2.05162, 3.04791, -2.76216, -0.993681},
 {395871, 0.244816, 1.63404, -0.196152, -0.99494,
 -1.46708, -0.0446372, 0.421901, 1.08452, 1.28361},
 {1.02581, -1.52396, 1.38108, 0.49684},
 {-3.95871, -1.63404, -0.244816, 1.46708, 0.99494,
 0.196152, -1.28361, -1.08452, -0.421901, 0.0446372}}

FIG. 13

10062192-020102